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Swinging anchor drive, in particular for Drying shaving devices As drive for Drying shaving devices are among other things Swinging anchor drives in more diversely Kind of structure known. One that known Kinds of structure, of them Improvement the invention to objects has, is in Fig. 1 that Drawing natureful shown: The drive consists of an electromagnet 1 and one straight across its Polstimflächen back and forth swinging armature 2, that at a cross beam 3 strengthens and by means of these on two at various Actuators that Anchor longitudinal axis attacking Bending fits with springs 4, z. B. Leaf springs, swingable supported it is, in such arrangement that itself that Armature 2 in its represented rest position lateral to Pole front surface magnets 1 of the offset rules and in Operation by the periodic attraction strength magnets, 1 periodic central before the pole front surface of the Magnets 1 one moves. The oscillation direction of the armature is 20 characterized with the double arrow. The presence and those Formation of the cross beam 3 is kungsweise for which we of the Swinging anchor drive actual prolonged, so that the armature 2 for example also un indirectly to Head end of the bending springs 4 fixed to be could.

It gives also Swinging anchor drives of others on design, with that the armature not straight across the pole front surfaces, separate vertical to that Pole front surfaces and swung. The first mentioned, in Fig. 1 kind of structure posed has however that Advantage that the air gap between magnet and armature significant smaller and that thereby the efficiency can be better.

One places oneself in Fig. 1 each of the two bends fits with springs 4 as one rigid lever forwards, both at foot end< B> 41< /B> and at the head end< B> 42< /B> rotatable ge stores itself is, so moved with the operation of the rack ten Drive that Head end 42 of each bending spring 4 on a straight one in the desired do not swing direction of motion of the armature 2, separate on one Circular arc, its center to foot end 41 is laid out and from the head end the 42 downward runs. Also with solid restraint of the bending springs 4 to Foot and head end, like it in Fig. 1 shown is, moved itself the head end 42 of each bending spring on a curve downward. Into each cases this has to the sequence that also the armature 2 lowers itself with each a rockers on a curve. Since thereby both ends of the armature on a same curve and in at any time same mass lower themselves, the armature remains in each time of his swinging motion parallel too its rest positions; its longitudinal axis experiences thus despite the curvilinear movement of the armature no rotation, separates only a Par allele shift; however it approaches this translation each time that Pole front surfaces magnets. The air gap between magnet and armature thus large enough dimensioned must become, thus the armature with that curvilinear a rockers not to those Pole front surfaces magnets knocks against.

Became one with the arrangement after Fig. 1 one of the two Bending springs let go away, the armature thus only on one, those support single bending spring for example also on the armature its longitudinal center hal ten could, then, a rigid compound of the armature with that became Ahead set, the longitudinal axis of the armature with everyone those do not only swing head end of the bending spring aforementioned Parallelverschiebung transverse to its longitudinal axis experiences, but additional also still another rotation. With a known Shaving apparatus, with Cutting blade in such a manner on one single leaf spring swingable supported is, is the leaf spring like that from formed that her along her longitudinal axis itself steady changing Flexural rigidity possesses, with which small sten Flexural rigidity close that Clamping place and with the largest Bending rigidity at the head end the sheets feather/spring. Such a leaf spring takes with through bends another Biegeform as a normal leaf spring, which bend rigidity on its whole length same exhibit, and its head end a smaller experiences with a rockers Rotation as the head end of a normal leaf spring; complete vermie that becomes however a rotation of the Head end of the leaf spring and at the head end the fixed Cutting blade also into this cases not. closer dealing with this known Execution form of the leaf spring one Swinging anchor drive and the aforementioned Rotation is unnecessary meanwhile here, there itself the subsequent embodiments ausschliesslich again only also the case it concern that the armature one Swinging anchor drive on at various Locations that Ankerlängsachse attacking bends fits with springs, z. B. Leaf springs, supported is, whereby thus only one Translation of the anchor longitudinal axis, but no rotation takes place.

That Inventor has however still an other cause recognized, with in Fig. 1 shown Kind of structure one Swinging anchor drive of a reduction of the air gap between magnet and against armature stands and those in particular with so small Ausführungsformen one Schwingankerantriehes to arise can, like it in Drying shaving devices required are. The finding is based on that consideration, dass on the armature not only an attractive force in that Direction parallel to that Pole front surfaces of magnet influence, but also one Attractive force toward the Polachse and/or. the Polachsen magnets. For the sake of simplicity is in the following following Fig. 1 of the drawing the first Attractive force as the horizontal and the latter as those vertical attractive force referred. That Inventor has recognized that the vertical Attraction strength, which is larger significant as, the horizontal attractive force, small Swinging anchor drives, serve those the armature supporting bending springs comparatively weak is, so far not eighth width units Ausknicken of the bending springs effected, itself in a shortening that Lever-prolonged between the head and Foot end of each of the bending springs out works and thus likewise an approach of to kers to those Polstimflächen of .des magnets with everyone A rockers to the sequence has. The

approach of the Armature on those Polarize-Irish Republican Army-flat is thus into this cases still larger as not out-breaking bending springs. This Appearance is small, for the calculation of the air gap however nevertheless significant. Unconsciously one has this Appearance already so far along-considered, by having the air gap large ge nug dimensioned that the armature knocks against not magnets; zwangläufig thereby however a larger resulted Air gap calculation, as it with knowledge that present Invention is more achievable. Under searches on Swinging anchor drives, with those the oscillation stroke of the Armature in more horizontal smell tung in the order of magnitude of approximately 3 mm lay, became in Oscillation stroke of the armature in senkrech ter direction of approximately 0.3 mm found, thus in an order of magnitude, alone with the circular arcs form of the swinging motion not is begründbar.

That Invention is the basis the object, one Swinging anchor drive in Fig. 1 structure shown kind so to modify, daJ3 it despite the circular arcs förmigen movement of the armature and despite the gege benenfalls present Durchknickmöglichkeit of the bending springs one smaller calculation of the air gap between magnet and Armature possible as it so far with the known Apparatuses achieved became. Which it identification refers thus to one Swinging anchor on floated in particular for Drying shaving devices with an electromagnet and a one straight across its pole front surfaces and swinging Armature, that on two at various locations anchor along axle of the attacking bending springs z. B. Leaf springs, swingable supported is, in such arrangement that itself the armature in its rest position lateral to Pole front surface magnets offset rules and in the operation by the periodic attractive force magnets of the periodic central before those Pole front surface magnets one moves. Such is according to invention Swinging anchor drive by the fact identified-calibrate net that the foot ends of the bending springs opposite the head ends of the bending springs in the same smell tung lateral offset arranged is, in which to is drawn more ker of magnets in the operation.

Two .einfache Embodiments to the Ausbil dung of such Sehwingankerantriebes are in Fig.2 and 3 shown, at those those Invention more near explained becomes. Each other in the figs ent speaking Parts are in each case with the same Reference numerals provide.

In Fig. 2 has the bending springs 4 as in Fig. 1 in the relaxed state a straight form, but are they to Oscillation direction 20 a bottom of 90 of different angles arranged. Also with this structure the pivotal movement has bends fits with springs one arcuate Movement head of the end of 42 to the sequence, and likewise can also with sem Structure Ausknicken of the bending springs step. Opposite Fig. 1 offset arrangement of the foot ends 41 has however to the sequence, that head ends itself to 42 of the bending springs with a rockers up one Kreisbogeabahn any longer does not lower, but lifts. During itself thus with that known structure after Fig. 1 the effects of the two Erschei mentioned now towards they sum up, stand after Fig. 2 each other against, and with more favorable They lift themselves accordance one on the other even mutual up.

Those most favorable accordance, of the Oblique folding or sliding bevel square the bending springs can light determined become. If for example with bending springs of one certain Feather-strong with an arrangement after Fig. 1 in accordance with the reported above experimental result balance a right stroke of the armature of 3 mm and lower right stroke of 0.3 mm of found became, then it is only required one, that Tangent of the Oblique placing angle of the bending springs, thus that Ratio in Fig. 2 shown distances $\angle A < /I >$ and $\angle b < /I >$ to each other to thus select that $A : b = 3 : 0,3 = < B > 10 : < /B > 1$ is.

With Embodiment after Fig.3 are the foot ends 41 of the bending springs in the similar manner how in Fig. 2 lateral offset provided, but are here the bending springs not straight, but weak S-förmig bent formed and in such a manner arranged that their ends to Stand for oscillation direction 20 a bottom angle of 90. While the embodiment after Fig.2 the advantage straighter Bending springs has, arises after Fig. 3 the advantage of the similar formation of the cross beam at their two ends as also perhaps the same well-behaved formation to foot end located strengthening means for the bending springs.

The magnet 1 and the armature 2 can with it the identification article actual arbitrary form and on design exhibit. For example know the pole forehead throats of the Magnets in known manner completely or partly tapered its, in the same way those Pole front fläehen the armature. That Armature can instead of from that Drawing apparent U shape also those Form one straight block have. Also those Bending springs can be different than shown; for example the two can from that Drawing apparent Bending springs the legs one about u-shaped ge bogenen Leaf spring its, at their center piece that Armature fixed is, as it is actual known, if only the foot ends of the two U-leg opposite the head ends offset according to invention is. Instead of Leaf springs know for example also wire springs or Wire spring bundle as Bending springs serve. Each of the two Bending springs knows also by one More count to each other parallel arranged single bending springs replaced its, those work together like goat a bending spring.